Election/Restriction

In accordance with the restriction requirement, Applicants elect Group I with traverse. Group I encompasses Livin-derived peptides p30-Livin α (SEQ ID NO:1) and p28-Livin β (SEQ ID NO:2). Claims 27-34, 40, 42, and 43 read on the elected invention (Group I).

Traversal of the Restriction Requirement

The Examiner asserts that the inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features because the sequence of the Livin protein is known in the art (Kasof et al. The Journal of Biological Chemistry 276 (5):3238-3246 2001; hereinafter "Kasof").

Applicants respectfully disagree with the Examiner's assertions.

Kasof identifies the human Livin protein as a novel member of the inhibitor of apoptosis protein family (IAPs) containing a single baculoviral IAP repeat domain (BIR) and a COOH-terminal RING finger domain. *See* abstract. The BIR domain is disclosed as forming a zinc-fold that is the critical motif for IAP anti-apoptotic activity and interaction with capases. *See* page 3238, right column. Kasof shows that Livin suppresses apoptosis induced by multiple stimuli. *See* Figure 3.

In contrast, the instant invention, as currently claimed, is directed to Livin-derived peptides having pro-apoptotic properties. *See* page 1 of the specification as originally filed. Following apoptotic stimuli, these Livin isoforms (α and β) undergo a specific proteolytic cleavage that trims the 52 amino acids at the N-terminus (of Livin). From each isoform a C-terminal Livin subunit is produced of approximately 30 and 28 kD containing the full BIR and RING domains. *See* page 10 of the specification as originally filed, Example 1, and Figure 1a. These peptides are the first example of IAP cleavage products that act as pro-apototic factors despite bearing a BIR domain. *See* page 18 of the specification as originally filed, Example 6, and Figure 6c. Furthermore, these peptides are disclosed as useful agents for the induction of

apoptosis, or programmed cell death, in target cells or as agents to enhance the sensitivity of cells to death-inducing agents or treatments. *See* page 21 of the specification as originally filed.

Thus, since the claims define peptides (p30-Livin α; SEQ ID NO:1 and p28-Livin β; SEQ ID NO:2) that are functionally distinct (pro-apoptotic vs. anti-apoptotic) from the peptides described in the reference, the instant invention provides a contribution to the field over the disclosure of Kasof et al.

Furthermore, Applicants note that Groups II and III encompass methods that are limited to the use of the specifically described peptides (p30-Livin α; SEQ ID NO:1 and p28-Livin β; SEQ ID NO:2) and respectfully request that the method claims (claims 35-39 and 41) be rejoined upon allowance of the product claims (claims 27-34, 40, 42, and 43).

Amendment to the Specification

Applicants respectfully submit that no new matter has been added by the amendment to the specification. Paragraph **[0091]** of the published application (at page 16 of the application as filed) was amended only to correct a typographical error in the journal title of a cited article (Narumi et al.). This reference was cited (citation BC) in the Information Disclosure Statement filed on December 18, 2007.

Claim Amendments

Claims 29, 32, 35, 39, 40, and 41 have been amended. New claims 42 and 43 have been added. Applicants respectfully submit that no new matter has been added either by the amendments or addition of new claims.

Claims 29 and 40 have been amended to correct typographical errors.

Claims 32 and 39 have been amended to conform to Markush format.

Claims 35 and 41 have been amended to clarify that the peptide can be either peptide of claim 28 (SEQ ID NO:1 or SEQ ID NO:2).

New claims 42 and 43 are drawn to a plasmid and a viral vector, respectively, comprising DNA encoding a p30-Livin α peptide or a p28-Livin β peptide. Support for these new claims is

found throughout the specification as originally filed, for example, at page 16, first and second full paragraphs and pages 25-27.

Furthermore, the DNA encoding the peptides of SEQ ID NOS: 1 and 2 can be readily derived by the skilled artisan from the amino acid sequences, the primers, and the references as disclosed in the specification as originally filed.

Conclusion

In light of the foregoing remarks, this application is now in condition for an examination on the merits, and early action is respectfully requested. If any questions remain regarding this response or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

A fee of $1115 (Small Entity) for a five month extension of time is believed to be due and is being paid via credit card. However, please charge any other required fee (or credit overpayments) to the Deposit Account of the undersigned, Account No. 503410 (Docket No. 7640-X05-046).

Respectfully submitted,

/Katharine F. Davis Wong/

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